



## A City of San Diego Guide to

# Environmentally Sensitive Erosion Control

## For Canyons and Hillsides

- Reducing Erosion
- Avoiding Liability Associated with Erosion
- Promoting Appropriate Plant Growth

*One of the most valuable roles vegetation plays in canyons and on hillsides is preventing erosion. That role is critical because local, state and federal laws, such as the Clean Water Act, prohibit contamination (including sedimentation) from entering waterways from drainages and storm drains. However, the very vegetation that anchors the soil can be a fire hazard to structures situated next to open space. This guide is designed to help you balance the legal requirements of maintaining vegetation while at the same time minimizing the risk of fire, and avoiding liability that can be incurred from damage caused by erosion on neighboring properties.*

### How can I prevent erosion?

Leaving as much natural vegetation in place as possible is the most effective way to minimize erosion. The above ground portions of the plants protect the soil from the scouring action of rain, and the below ground portions, usually the roots, help hold the soil in place. Existing vegetation can be thinned, leaving gaps between plants, but by leaving the roots in place you still provide effective erosion control. The **City of San Diego Guide To Canyon Fire Safety** details the recommended distances of pruning and thinning necessary to reduce fire hazards without causing erosion.

### What if plants must be removed?

Clear cutting is prohibited by the City in most cases. However, if a plant must be removed because it is dying or creating a hazard, replacement with a new plant of appropriate

species can protect a slope from erosion within a year or two. Choose plants that have deep roots and do not require permanent irrigation. Improper irrigation and irrigation leaks are a common source of erosion.

### Which plants should be used?

Species should provide an adequate root system. Deep rooted, native plants are the best suited for maintaining slope stability. Low growing plants are best in areas close to a structure where there is danger of fire. Woody groundcovers are best since they have a high water content and have a deep root system to maintain the stability of the slope.

Dwarf chaparral broom (*Baccharis pilularis* variety) has deep roots for erosion control and with watering twice a month, will retain ample moisture to guard against fire.

*This is a City of San Diego publication produced by:  
Environmental Services*

*In Cooperation with:  
Development Services  
Fire and Life Safety Services  
Neighborhood Code Compliance*

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California fuchsia (*Epilobium canum*) and native verbena (*Verbena lilacina*) are also examples of fire retardant plants which can help guard against fire and erosion. Native cacti and yucca are also effective, yet should be planted only in areas where there is no pedestrian traffic. Cacti spines can be dangerous and cause injuries.

### Which plants should NOT be used?

Certain plants, such as those listed below, should NOT be used, because they are invasive species which will take over slopes and the surrounding areas. It is very important that these plants are NOT used around wildlife preserves or other natural areas since they put native plant and animal life at risk.

#### NON-NATIVE PROBLEM SPECIES

<u>Botanical Name</u>	<u>Common Name</u>
<i>Ailanthus altissima</i>	Tree-of-Heaven
<i>Arundo donax</i>	Giant Reed
<i>Broussonetia papyrifera</i>	Paper Mulberry
<i>Carpobrotus</i> & others	Iceplant
<i>Cortaderia selloana</i>	Pampas Grass
<i>Eucalyptus</i> spp.	Eucalyptus
<i>Nicotiana glauca</i>	Tree Tobacco
<i>Pennisetum setaceum</i>	Fountain Grass
<i>Ricinus communis</i>	Castor Bean
<i>Spartium junceum</i>	Spanish Broom
<i>Tamarix</i> spp.	Tamarisk

It is important to NOT choose non-woody groundcovers, such as iceplant, which is shallow rooted and can cause portions of the slope to fail.

### How can I protect bare areas?

Areas should be left bare for as short a period as possible. Where bare areas are not immediately revegetated, mulching or jute matting can provide temporary protection for slopes. Eventually, the mulched and composted areas can be revegetated, providing more permanent erosion control. Mulch can be obtained free of charge at the City's Miramar Landfill.

### When to use sandbags?

Sandbags, hay bales, silt fences, and detention basins are not erosion control measures. They only partially control the silt that is produced as a result of an erosion problem. They are temporary measures that can be used until the erosion problem is corrected.

Silt fences and hay bales are most effective when placed so they follow the contours of the slope. In other words, they should be all at the same height, running horizontally across the slope. To be most effective, they should be pulled away from the toe of the slope to create an area where water can pond and drop its sediment load behind the structure. This will help prevent silt that is produced as a result of an already eroding slope from entering water courses.


### What is the best way to reduce erosion?

Pruning the natural cover, rather than removing it altogether, to reduce a fire hazard is the easiest and most effective way to prevent the erosion of your slope. Following the **City of San Diego Guide to Canyon Fire Safety** provided by Fire and Life Safety Services will help you reduce vegetation on slopes that may be a fire hazard without causing erosion or sedimentation problems. Also in certain situations, cutting or pruning vegetation may require a permit. Refer to the Guide for additional information.

For a copy of the **City of San Diego Guide to Canyon Fire Safety**, call Fire and Life Safety Services at 533-4444.

For more information on erosion control, please call 492-5033 to talk with a City of San Diego erosion control expert.

This information is available in alternative formats upon request.

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